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Ovarian Abscess: A Rare but Serious Complication of Transvaginal Oocyte Retrieval for IVF - A Case Report

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Abstract

Though IVF has brought rays of hopes in many infertile couples, the process of IVF itself Involves a series of multiple steps. Transvaginal oocyte retrieval (TVOR) is one such crucial step. However there are some documented complications of this process like infection, bleeding secondary a blood vessel puncture or pelvic visceral trauma etc. The infection may remain localised, might lead to pus formation or can cause septicemia. We describe here a case of ovarian abscess which occured following TVOR. We were able to manage the abscess with transvaginal drainage and antibiotics. However awareness of this rare complication following TVOR is important as early diagnosis and management of ovarian abscess can salvage the Ovary. As they say "stitch in time, saves nine".

Keywords: *Infertility, IVF, TVOR, ovarian abscess.*

Introduction

An ovarian abscess is defined as isolated infection of ovary with pus formation without involvement of fallopian tubes. Whereas a tubo-ovarian abscess involves both the fallopian tube and the ovary.[1] An ovarian abscess is a rare surgical emergency that can be lethal at times. [2] In order to have clinical suspicion of this complication during the process of IVF we are sharing this case of ovarian abscess following oocyte retrieval for IVF. As use of IVF technique is rapidly increasing so are the possible complications. Correct pre-operative diagnosis and prompt surgical intervention at an early stage should be considered so as to salvage the ovary.

Ovarian abscess should always be considered in differential diagnosis of patient with abdominal pain, leukocytosis and fever after ovum retrieval for IVF. Ultrasound guided (TVOR) is a relatively simple and minimally invasive method with rare complications. TVOR has many advantages like excellent oocyte yields, increase speed and proper visualization of major vessels, there by decreasing the inadvertent blood vessel injury.[3]

Case Report

A 31 year old patient, with secondary infertility, with one left tubal ectopic pregnacy managed medically one year back, who underwent IVF –ET(Embryo Transfer) 4 weeks ago in another centre was referred to our centre with complaints of fever with chills, lower abdominal pain of throbbing nature, for a duration of more than 3 weeks after ET. She had undergone 2 failed cycles of IVF using the antagonist protocol and following the 2nd cycle she developed the above symptoms.

On examination the patient was having tachycardia pulse rate was 140/min, blood pressure of 100 /60 mm of Hg, temperature 102°F.Laboratory Investigations showed Hb-9.8gm/dl, WBC-15,600 cells/mm3, random blood sugar-70mg/dl, platelet-5.08 lakh/mm3, PT-15.2 sec, INR-1.13. A transvaginal ultrasound revealed a bulky bilateral ovaries with multiple follicular abscess. (Image no 1). Left ovary was measuring 4 × 3.8 × 3.5 cm and The right ovary measured 3 × 3.3 cm and contained several follicles. The uterus appeared normal with thin endometrium

measuring 5 mm. There was no free fluid in the pelvis.

She was admitted with these complaints and was managed conservatively on intravenous antibiotics- IV Cefoperazone and IV Metronidazole. But even after 24 hours of parenteral antibiotics she had persistence of symptoms. Then the decision to aspirate the abscess, SOS laproscopic drainage was taken. Under all aseptic precautions and aspiration of ovarian abscess by transvaginal guided ultrasound was done and around 100 ml pus drained from left ovary (Image2)and sent for culture sensitivity. postoperative course was uneventful. Patient was given higher parenteral antibiotics. Patient was asymptomatic on the next day of abscess aspiration and was discharged home after 72 hours in stable condition under parenteral antibiotic cover of 1 week followed by oral antibiotics. The patient has done well on follow up with complete clinical and ultrasonographic resolution of abscess.

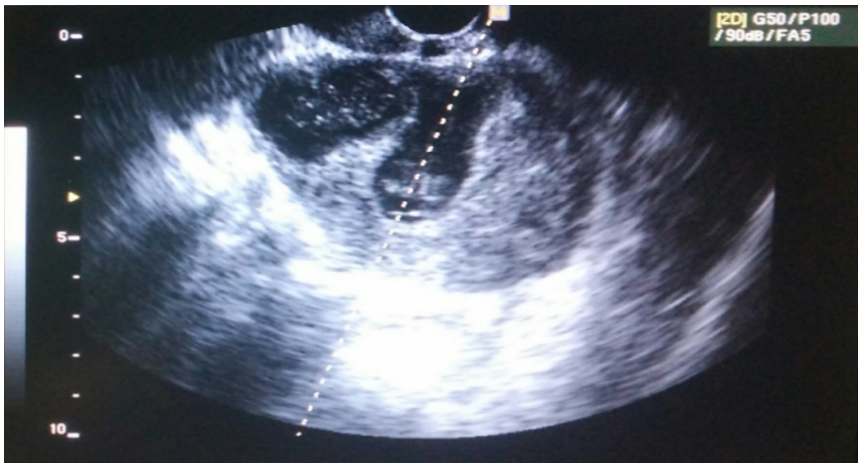

Image1. *Transvaginal sonographic guided aspiration of follicular ovarian abscess.*

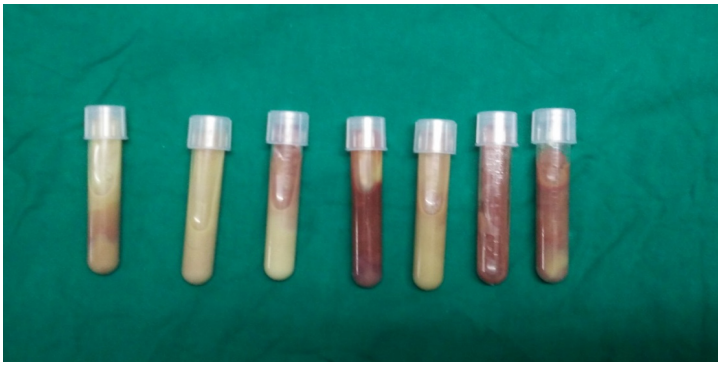

Image2. *Pus collected following transvaginal aspiration of ovarian abscess*

Discussion

Pelvic infection is a rare but serious complication of TVOR. Fever and abdominal pain occur in < 1 % of procedures. Pelvic infections after TVOR arise possibly due to inoculation of vaginal microorganisms into ovary during pick up, reactivation of latent pelvic infection or direct colonic injury. During TVOR vaginal microbes may ascend to ovary even when topical antiseptics or prophylactic antibiotics are used. [4] Ovarian endometriotic cysts may further increase the risk of abscess formation as the old blood provides rich medium for bacterial growth.[5] When grown on culture media S.viridans, Escherichia coli, bacteroides and peptostreptococcus species are isolated. In case of an old pelvic inflammatory disease, abscess formation may occur due to ovarian puncture during TVOR.

Generally the time interval between the TVOR and patient developing the symptoms is very short but may be variable and occasionally prolonged. The range being 1-320 days. Our patient presented with symptoms within 3 weeks of TVOR. Leukocytosis is the frequent finding. The ultrasound confirms the diagnosis of pelvic mass/abscess and /or fluid collection. In our case,the diagnosis was confirmed based on the history, symptoms, investigation and ultrasound.

The predisposing factors for ovarian abscess are previous laparotomy, structural genital anamolies, endometriosis and hydrosalphinx during ART. Any endometrioma more then 4 cm should be removed prior to IVF. Preconception evaluation and treatment should be considered for such condition.

Treatment of ovarian abscess varies depending on the clinical situation. Medical treatment alone is successful in only 34 % to 87.5 % of patients with pelvic abscess. [2] Initial treatment is with parenteral antibiotics. However if there is no response to antibiotics within 72 hours,ultrasound guided aspiration or immediate laparoscopy or laparotomy to be done for abscess drainage.[2] In our case, transvaginal ultrasound guided aspiration of ovarian follicular abscess combined with parenteral antibiotics was done. Various studies have shown that ultrasound guided abscess aspiration is also an safe and effective regimen in hemodynamically stable patient.

Ultrasound-guided drainage of pelvic abscesses has been described as an alternative to surgery. However, the incidence of residual abscess that requires further surgery despite repeated ultrasound-guided aspiration was 6.6% in a study involving 302 women who underwent 449 aspirations. [6] But in our case, the patient responded completely with full clinical recovery.

Antibiotic prophylaxis, vaginal disinfection, be cognizant of peristaltic bowel on ultrasound to avoid bowel puncture and subsequent infection, endometrioma if any to be treated before the commencement of IVF, acute abdomen or peritonitis post TVOR should be handled surgically and quickly, stable patients can be treated medically only or also with ultrasound guided assisted abscess drainage.

Conclusion

IVF is a wonderful option for infertile couples. While councelling the patient about this elective treatment of IVF,full knowledge of possible complications must be understood.

Though ovarian abscess is a rare complication post TVOR for IVF, but if it occurs it can have serious consequences. In all these complications, early recognition with high index of suspicion and appropriate management is the key,which can only be accomplished if the physician keeps them in mind as differential diagnosis despite their rarity.Also staying up to date on different techniques to help and minimize the risks for such complication is also an important aspect on the part of physician. Transvaginal ultrasound guided drainage of abscess is same and effective modality.

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